

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT -- REVISED

PERMITTEE

Metropolitan Water Reclamation District of Greater Chicago  
Attn: Mr. Thomas K. O'Connor, Chief of Maintenance and Operations  
100 East Erie Street  
Chicago, Illinois 60611

Application No.: 75060004 I.D. No.: 031820AAC  
Applicant's Designation: Date Received: August 22, 2002  
Subject: John E. Egan Water Reclamation Plant  
Date Issued: November 18, 2002 Expiration Date: December 18, 2006  
Location: 550 South Meacham Road, Schaumburg

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of four 21.0 mmBtu/hr natural/digester gas-fired boilers, two 24.0 mmBtu/hr digester gas flares, one 4.46 mmBtu/hr natural gas-fired electric generator, three ozone generators, and one 1,000 gallon gasoline storage tank pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., sulfur dioxide and nitrogen oxides less than 100 tons per year). As a result the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes all operating permits issued for this location.
- 2a. Emissions and operation of the 4 boilers (combined) shall not exceed the following limits:

	Natural/Digester Gas Usage			
	(mmscf/Mo)	(mmscf/Yr)		
	67.2	806.4		
<u>Pollutant</u>	<u>Emission Factor (Lb/mmscf)</u>	<u>Emissions</u>		
		(Ton/Mo)	(Ton/Yr)	
Sulfur Dioxide (SO <sub>2</sub> )	169	5.7	68.2	
Nitrogen Oxides (NO <sub>x</sub> )	100	3.4	40.4	
Carbon Monoxide (CO)	84	2.9	33.9	
Particulate Matter (PM)	7.6	0.3	3.1	
Volatile Organic Material (VOM)	5.5	0.2	2.3	

These limits are based on the maximum natural/digester gas usage, standard AP-42 emission factors for natural gas, and the submitted SO<sub>2</sub> emission factor for digester gas combustion. Compliance with annual limits shall be determined from a running total of 12 months of data.

- b. Emissions and operation of the 2 digester gas flares (combined) shall not exceed the following limits:

	Digester Gas Burned			
	(mmscf/Mo)	(mmscf/Yr)		
	28.8	345.6		
<u>Pollutant</u>	<u>Emission Factor</u> (Lb/mmscf)	<u>Emissions</u>		
		(Ton/Mo)	(Ton/Yr)	
Sulfur Dioxide (SO <sub>2</sub> )	169	2.5	29.2	
Nitrogen Oxides (NO <sub>x</sub> )	9	0.2	1.6	
Carbon Monoxide (CO)	7.2	0.1	1.3	
Particulate Matter (PM)	18	0.3	3.2	
Volatile Organic Material (VOM)	4.2	0.1	0.8	

These limits are based on the maximum amount of digester gas burned and the submitted emission factors for digester gas combustion. Compliance with annual limits shall be determined from a running total of 12 months of data.

- c. Emissions and operation of the electric generator shall not exceed the following limits:

Natural Gas Usage		<u>Pollutant</u>	<u>Emission Factor</u> (Lb/mmscf)	<u>Emissions</u>	
(mmscf/Mo)	(mmscf/Yr)			(Ton/Mo)	(Ton/Yr)
3.2	38.3	NO <sub>x</sub>	100	0.2	1.9
		CO	84	0.2	1.6

These limits are based on the maximum firing rate (4.46 mmBtu/hr), maximum operating time (8,760 hr/yr), and standard AP-42 emission factors. Compliance with annual limits shall be determined from a running total of 12 months of data.

- d. This permit is issued based on negligible emissions of NO<sub>x</sub> and SO<sub>2</sub> from the three ozone generators. For this purpose, emissions of each contaminant from each emission source shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.
- e. This permit is issued based on negligible emissions of VOM from the gasoline storage tank. For this purpose emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/yr.

3. The Permittee shall maintain monthly records of the following items:
  - a. Natural gas usage in the boilers (mmscf/mo, mmscf/yr);
  - b. Amount of digester gas burned in the boilers (mmscf/mo, mmscf/yr);
  - c. Amount of digester gas flared (mmscf/mo, mmscf/yr).
4. The emissions of carbon monoxide from the boilers shall not exceed 200 ppm corrected to 50% excess air, pursuant to 35 Ill. Adm. Code 216.121.
5. The emissions of sulfur dioxide from the digester gas flares shall not exceed 2,000 ppm, pursuant to 35 Ill. Adm. Code 214.300.
6. The hydrogen sulfide concentration of the digester gas shall not exceed 0.1 volume percent based on monthly testing of the digester gas.
7. The gasoline storage tank shall be in compliance with the conditions of 35 Ill. Adm. Code 218.583.
8. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, or such lesser quantity as USEPA may establish in rule which would require the Permittee to obtain a CAAPP permit from the Illinois EPA. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a CAAPP permit from the Illinois EPA.
9. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.
10. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.
11. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Compliance Section (#40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
9511 West Harrison  
Des Plaines, Illinois 60016

12. The Permittee shall submit the following additional information with the Annual Emissions Report, due May 1st of each year: Natural gas usage in the boilers (mmscf/yr), amount of digester gas burned in the boilers (mmscf/yr), and amount of digester gas flared (mmscf/yr).

It should be noted that this permit has been revised to incorporate operation of a third ozone generator, to be constructed under Construction Permit 02080046.

If you have any questions on this, please call Jim Kallmeyer at 217/782-2113.

Donald E. Sutton, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

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cc: Illinois EPA, FOS Region 1  
Illinois EPA, Compliance Section  
Lotus Notes

### Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from the plant operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant at rated capacity. The facility would limit combustion of natural gas and digester gas. The resulting maximum emissions are well below the levels of sulfur dioxide and nitrogen oxides at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less wastewater is processed and control measures are more effective than required in this permit.

- 1a. Emissions and operation of the 4 boilers (combined) shall not exceed the following limits:

Natural/Digester Gas Usage	
(mmscf/Mo)	(mmscf/Yr)

67.2	806.4
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<u>Pollutant</u>	Emission Factor	Emissions	
	(Lb/mmscf)	(Ton/Mo)	(Ton/Yr)
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Particulate Matter (PM)	7.6	0.3	3.1
Volatile Organic Material (VOM)	5.5	0.2	

2.3 These limits are based on the maximum natural/digester gas usage, standard AP-42 emission factors for natural gas, and the submitted SO<sub>2</sub> emission factor for digester gas combustion. Compliance with annual limits shall be determined from a running total of 12 months of data.

- b. Emissions and operation of the 2 digester gas flares (combined) shall not exceed the following limits:

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- c. Emissions and operation of the electric generator shall not exceed the following limits:

Natural Gas Usage		Pollutant	Emission Factor (Lb/mmscf)	Emissions	
(mmscf/Mo)	(mmscf/Yr)			(Ton/Mo)	(Ton/Yr)
3.2	38.3	NO <sub>x</sub>	100	0.2	1.9
		CO	84	0.2	1.6

These limits are based on the maximum firing rate (4.46 mmBtu/hr), maximum operating time (8,760 hr/yr), and standard AP-42 emission factors. Compliance with annual limits shall be determined from a running total of 12 months of data.

- d. This permit is issued based on negligible emissions of NO<sub>x</sub> and SO<sub>2</sub> from the three ozone generators. For this purpose, emissions of each contaminant from each emission source shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.
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